

East Asia Tariff Concession: A CGE analysis

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Overview

East Asia tariff concession: a CGE analysis

- Tariff reductions in East Asia vary significantly in terms of the initial and final levels of tariff rates as well as the degrees of tariff cuts.
- Tariff concessions in East Asian EPAs have not substantially been high enough in effect.
- East Asian countries would remain benefit largely from future trade liberalization in the region.

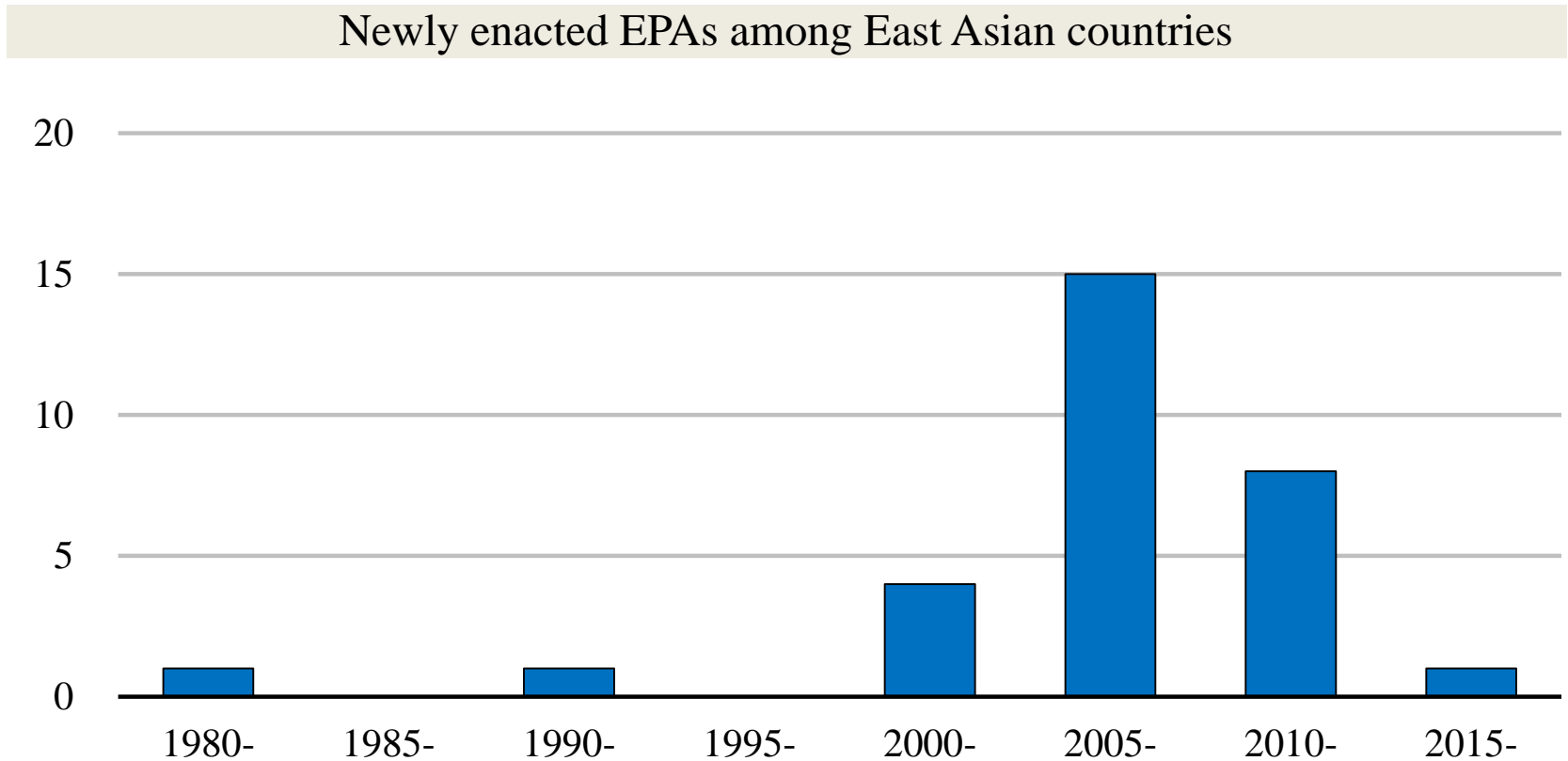
Tariff concession

Three measurements

- Number of commodities
Tariff lines at HS 6 digit classifications
- Tariff rates
Trade weighted averages according to GTAP Data Base
- Income gains
Changes in equivalent variations by GTAP simulations

Trends in East Asian EPAs

The progress of bilateral and multilateral EPAs among East Asian countries has accelerated since mid-2000s.

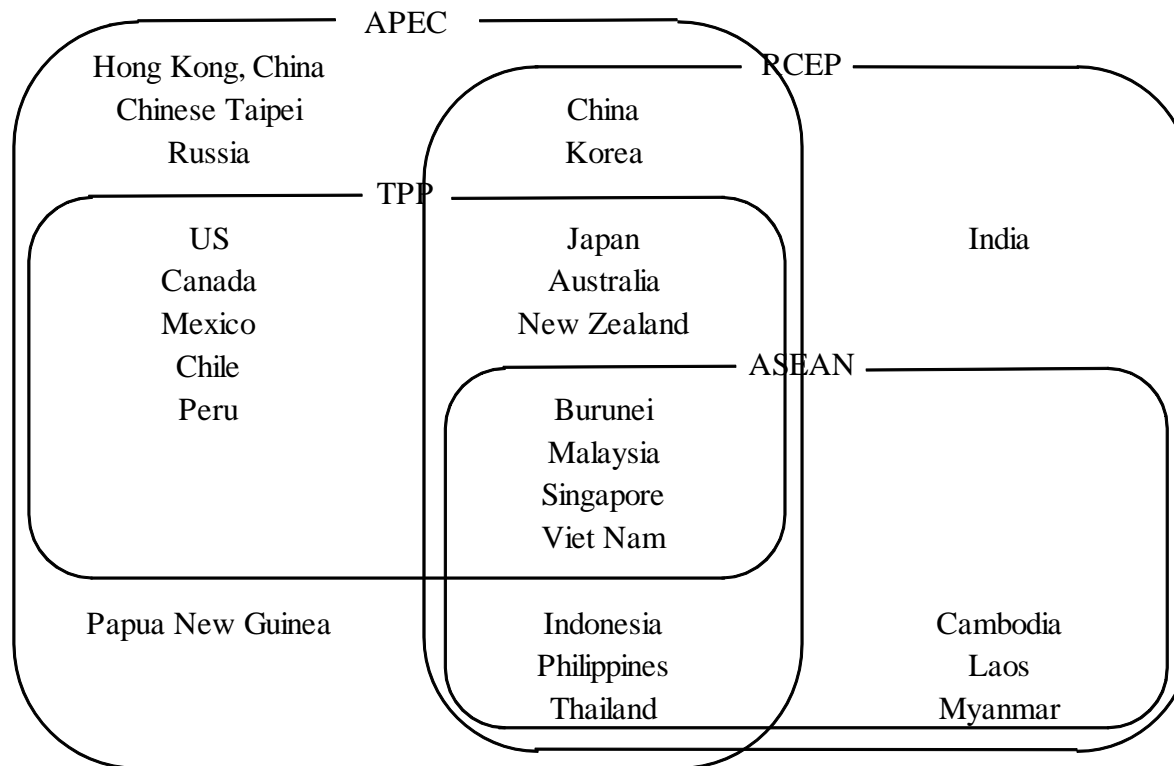


Sources: Authors' compilation from various WEB sites

Regional integration in Asia-Pacific

ASEAN has completed within ASEAN and ASEAN plus one EPAs. Negotiations on Regional Comprehensive Economic Partnership (RCEP) began in 2013.

Framework of EPAs in Asia-Pacific



Source: Authors' compilation

Tariff concessions: HS 6 digit classifications

East Asian EPAs have “substantially covered” various commodities for tariff reductions ranging from around 80 per cent in India to 100 per cent in Singapore, Australia and New Zealand.

Tariff concessions in East Asian EPAs: number of commodities

	Average*	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL	(%)
BRN	98.2	-	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.3	98.4	86.2	98.2	99.2	99.3	
KHM	94.6	98.5	-	98.5	98.5	98.5	98.5	98.5	98.5	98.5	90.8	90.2	88.5	85.3	91.0	90.8	
IDN	93.5	98.8	98.8	-	98.8	98.8	98.8	98.8	98.8	98.8	94.7	92.5	52.1	92.2	92.1	94.7	
LAO	84.3	80.0	80.0	80.0	-	80.0	80.0	80.0	80.0	80.0	93.1	97.7	80.3	86.8	90.1	93.1	
MYS	96.3	98.9	98.9	98.9	98.9	-	98.9	98.9	98.9	98.9	97.6	93.7	80.9	95.0	93.0	97.6	
PHL	89.9	99.1	99.1	99.1	99.1	99.1	0.0	99.1	99.1	99.1	96.1	92.8	82.2	97.7	90.0	96.1	
SGP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
THA	97.2	99.8	99.8	99.8	99.8	99.8	99.8	99.8	-	99.8	98.9	93.8	78.6	96.6	95.3	98.9	
VNM	82.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	-	95.4	93.2	79.9	95.4	91.2	95.4	
AUS	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	n.a.	-	n.a.	n.a.	n.a.	
CHN	95.1	95.1	95.1	95.1	95.1	95.1	95.1	95.1	95.1	95.1	n.a.	-	-	-	n.a.	n.a.	
IND	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	-	-	-	n.a.	n.a.	-	
JPN	93.7	89.5	93.6	94.2	93.6	94.6	95.2	93.4	94.7	94.6	n.a.	-	n.a.	-	-	-	
KOR	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	n.a.	n.a.	n.a.	-	-	n.a.	
NZL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	n.a.	n.a.	-	-	n.a.	-	

* Averages of RCEP countries for ASEAN countries and those of ASEAN countries for non-ASEAN countries (same in the following tables).

Source: Authors' estimates

Tariff rates in East Asian countries: initial

Remaining trade weighted average tariff rates in 2011 vary widely among East Asian countries.

Those are also different according to trade partners.

Trade weighted average tariff rates in 2011

	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL	(%)
BRN	5.4	-	0.9	5.4	0.0	2.9	4.4	13.3	5.2	0.3	2.2	4.0	6.9	9.7	1.9	1.4	
KHM	12.1	13.8	-	7.4	13.4	11.4	9.3	14.6	14.3	11.9	11.3	10.5	7.8	11.7	11.7	15.6	
IDN	2.9	0.0	0.0	-	0.0	0.4	0.4	3.3	1.4	2.8	4.5	1.3	3.8	7.6	1.3	4.4	
LAO	8.3	0.0	22.3	4.3	-	3.5	4.0	22.1	6.7	2.8	8.2	11.2	8.9	19.2	27.0	6.3	
MYS	3.9	1.2	6.5	1.5	0.1	-	3.1	1.9	1.6	7.4	1.9	4.0	4.2	8.7	7.3	2.7	
PHL	1.7	0.0	0.0	0.0	0.0	0.1	-	1.9	1.5	14.1	1.4	0.9	6.8	2.0	1.6	0.8	
SGP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
THA	7.6	0.0	14.4	7.9	4.2	6.1	11.4	7.6	-	9.0	2.9	7.6	8.7	8.8	6.0	9.2	
VNM	6.3	0.3	3.6	3.6	0.6	2.6	3.2	7.3	4.0	-	3.7	7.2	8.3	5.5	7.7	4.6	
AUS	0.4	0.0	0.0	1.7	0.0	0.2	0.1	0.0	0.0	0.1	-	3.4	4.7	10.9	10.4	0.0	
CHN	1.9	0.0	1.9	1.3	0.3	1.9	0.2	3.7	2.0	1.3	1.7	-	2.2	7.1	5.5	3.0	
IND	19.9	0.0	42.4	34.0	0.1	20.7	6.7	5.9	8.3	12.8	4.9	7.2	-	8.3	7.6	9.8	
JPN	1.4	0.0	0.2	0.3	0.5	0.5	1.5	0.1	4.6	0.8	2.7	3.0	0.9	-	1.7	10.1	
KOR	3.6	2.4	6.1	1.7	3.3	2.0	4.7	2.5	8.4	9.2	4.4	6.4	13.2	4.9	-	18.6	
NZL	0.8	0.0	0.0	1.8	0.0	1.1	1.2	0.0	1.3	2.6	0.0	3.9	2.6	4.4	3.0	-	

Source: Authors' estimates

Tariff rates in East Asian countries: final

Trade weighted average tariff rates after implementing EPAs would not necessarily be closer to zero in numbers of countries in East Asia including China, India, Japan and Korea.

Trade weighted average tariff rates after implementing EPAs

	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL
BRN	2.4	-	0.0	1.5	0.0	0.7	0.4	8.0	0.7	0.3	1.8	2.6	3.8	1.7	0.2	0.7
KHM	1.8	3.2	-	0.1	0.0	0.0	0.0	0.0	0.0	0.0	8.8	3.3	2.9	11.3	9.0	14.0
IDN	1.9	0.0	0.0	-	0.0	0.1	0.4	3.2	1.3	2.8	1.1	1.0	3.6	4.0	0.6	0.1
LAO	6.3	0.0	22.2	3.7	-	2.9	3.9	19.8	5.8	2.0	4.0	1.6	5.4	16.5	26.8	0.3
MYS	1.5	0.1	6.4	1.0	0.0	-	2.8	0.2	1.1	6.4	0.9	1.4	4.1	2.2	4.8	0.8
PHL	1.3	0.0	0.0	0.0	0.0	0.1	-	1.3	1.5	14.1	0.2	0.9	3.9	1.2	0.9	0.1
SGP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
THA	6.8	0.0	1.8	7.0	1.8	5.4	10.2	7.4	-	6.9	1.2	6.2	8.7	8.6	5.7	7.3
VNM	5.4	0.2	3.6	3.3	0.6	2.1	3.1	6.9	4.0	-	3.3	6.1	7.6	4.0	6.4	4.3
AUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	n.a.	-	n.a.	n.a.	n.a.
CHN	1.6	0.0	1.9	1.3	0.3	1.8	0.1	2.6	1.8	0.5	n.a.	-	-	-	n.a.	n.a.
IND	19.2	0.0	42.4	32.9	0.1	20.1	5.3	5.5	7.9	11.9	-	-	-	n.a.	n.a.	-
JPN	1.3	0.0	0.1	0.3	0.5	0.5	0.8	0.1	4.5	0.6	n.a.	-	n.a.	-	-	-
KOR	2.3	0.3	4.4	0.8	2.8	0.7	3.8	0.2	7.8	7.2	n.a.	n.a.	n.a.	-	-	n.a.
NZL	0.7	0.0	0.0	1.6	0.0	1.1	1.1	0.0	1.2	2.2	n.a.	n.a.	-	-	n.a.	-

Source: Authors' estimates

Tariff concessions: GTAP Data Base

Tariff concessions in East Asian EPAs have not always been substantially high enough in terms of average tariff rates, those would be much more effective than number of commodities.

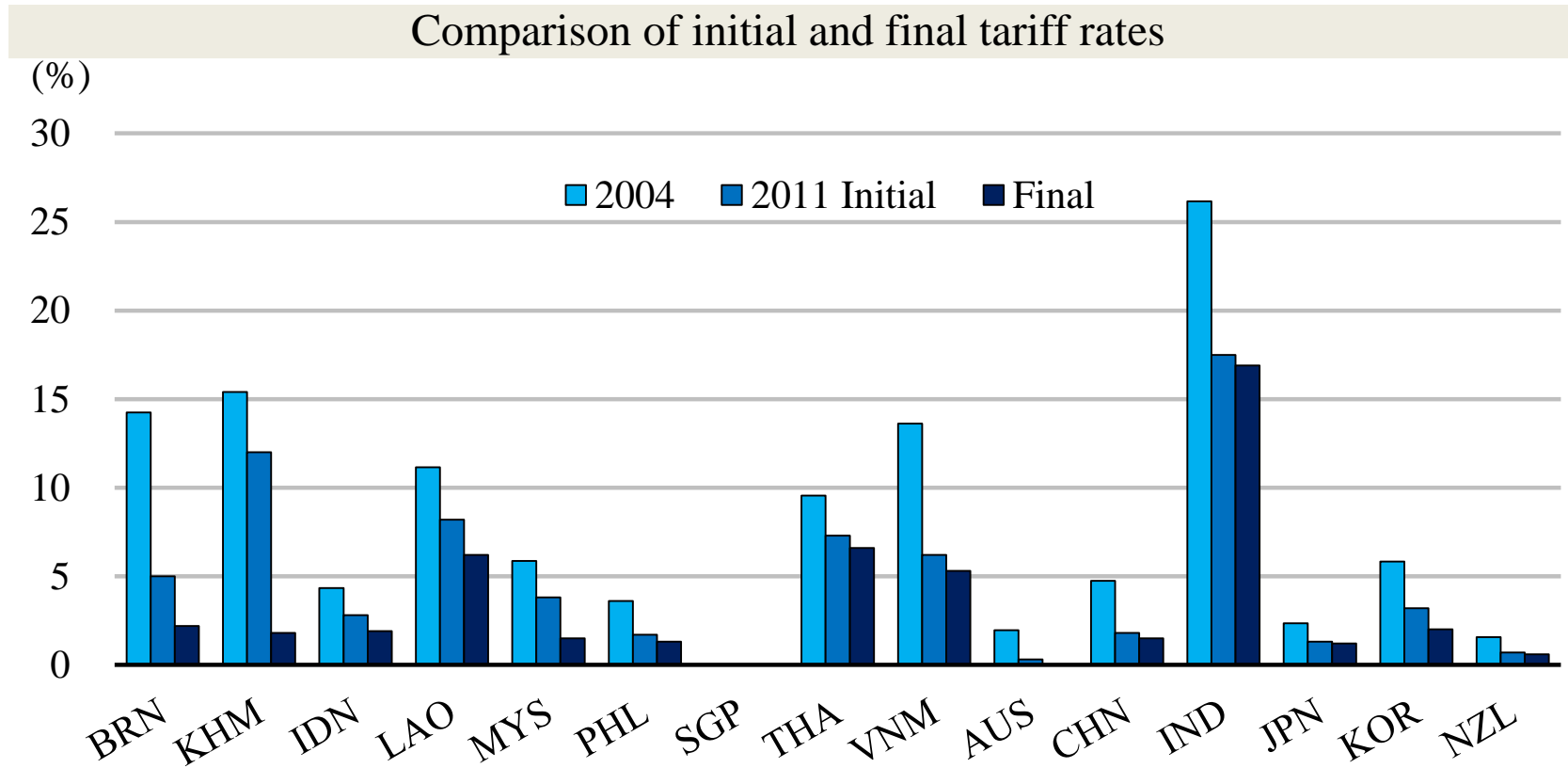
Tariff concessions in East Asian EPAs: tariff rates

	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL	(%)
BRN	55.7	-	95.8	71.6	0.0	77.2	90.8	39.5	86.4	15.9	17.9	33.2	45.7	82.5	89.1	50.0	
KHM	84.9	76.6	-	98.8	99.9	99.8	99.5	100.0	99.9	100.0	21.7	68.7	62.5	3.3	22.7	10.3	
IDN	32.2	-	96.1	-	-	66.5	0.0	2.1	4.5	0.0	76.5	25.1	5.7	47.5	56.6	97.6	
LAO	24.9	-	0.6	14.0	-	16.9	2.7	10.5	12.1	29.2	51.3	86.0	39.5	14.3	0.6	95.8	
MYS	60.6	90.8	0.6	31.0	100.0	-	7.5	87.4	33.9	13.4	53.7	65.8	3.3	74.4	33.6	70.7	
PHL	23.1	-	-	2.7	-	0.0	-	30.6	0.0	0.0	82.0	0.0	42.8	41.8	43.0	92.9	
SGP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
THA	9.8	7.0	87.2	10.8	58.1	11.7	10.9	1.7	-	22.8	59.8	19.1	0.1	1.6	4.1	20.4	
VNM	14.6	24.3	0.2	8.3	0.1	17.8	4.2	5.6	1.7	-	9.7	15.1	9.0	26.6	16.8	7.0	
AUS	100.0	0.0	-	100.0	-	100.0	100.0	-	100.0	100.0	-	n.a.	-	n.a.	n.a.	n.a.	
CHN	18.1	0.0	0.7	4.4	0.6	6.3	47.1	31.1	12.2	59.3	n.a.	-	-	-	n.a.	n.a.	
IND	3.6	0.0	0.0	3.2	0.0	2.7	21.4	7.8	4.8	6.7	-	-	-	n.a.	n.a.	-	
JPN	6.6	0.0	68.6	9.8	0.0	0.7	45.9	2.1	0.8	27.7	n.a.	-	n.a.	-	-	-	
KOR	36.8	88.2	28.3	55.1	14.6	64.4	20.3	93.6	7.5	21.4	n.a.	n.a.	n.a.	-	-	n.a.	
NZL	7.9	16.6	0.0	10.6	-	2.3	10.7	-	7.0	16.5	n.a.	n.a.	-	-	n.a.	-	

Source: Authors' estimates

Tariff reductions in East Asia

Tariff reductions in East Asia vary significantly in terms of the initial and final levels of tariff rates as well as the degrees of tariff cuts.



Source: Authors' estimates based on GTAP Data Base version 9.0

Framework of CGE model simulations

- Data
 - GTAP Data Base version 9.0 (benchmark year 2011)
 - Updated baseline in 2015 based on IMF
- Model
 - Perfect competition (CRTS: constant return to scale)
 - Armington assumption (imperfect substitutes of goods)
 - Fixed total amount of labor
 - International capital movements (expected rate of return equalized)
- Policy scenario
 - Unilateral removal of tariffs existed in 2011
 - Unilateral reductions of tariffs according to existing EPAs

Income gains from tariff removals

Income gains fully removing tariffs in 2011 vary widely among ASEAN countries. Other six countries would gain less from tariff removals for imports from ASEAN countries.

Changes in equivalent variations according to tariff removals

	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL	(% of GDP)
BRN	3.77	-	0.00	0.06	0.00	0.19	0.00	1.93	0.23	0.00	0.01	0.54	0.12	0.32	0.36	0.00	
KHM	8.65	0.00	-	0.01	0.00	0.21	0.00	0.21	1.86	1.45	0.01	4.10	0.09	0.11	0.60	0.01	
IDN	0.52	0.00	0.00	-	0.00	0.00	0.00	0.16	0.01	0.01	0.02	0.06	0.04	0.19	0.03	0.00	
LAO	1.43	0.00	0.00	0.00	-	0.00	0.00	0.01	0.52	0.05	0.01	0.85	0.01	-0.02	0.00	0.00	
MYS	2.39	0.00	0.00	0.00	0.00	-	0.13	0.19	0.05	0.04	0.01	0.70	0.05	0.77	0.43	0.01	
PHL	8.63	0.00	0.00	0.00	0.00	0.00	-	0.96	0.05	0.37	0.34	2.03	0.86	1.97	2.05	0.00	
SGP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
THA	5.58	0.00	0.02	0.33	0.02	0.46	0.24	0.49	-	0.23	0.06	1.84	0.19	1.38	0.29	0.01	
VNM	3.66	0.00	0.01	0.02	0.00	0.02	0.00	0.14	0.00	-	0.02	2.35	0.17	0.16	0.77	0.00	
AUS	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	n.a.	-	n.a.	n.a.	n.a.	
CHN	0.03	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.01	0.00	n.a.	-	-	-	n.a.	n.a.	
IND	0.87	0.00	0.00	0.53	0.00	0.22	0.00	0.04	0.03	0.05	-	-	-	n.a.	n.a.	-	
JPN	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	n.a.	-	n.a.	-	-	-	
KOR	0.63	0.00	0.00	0.13	0.00	0.01	-0.01	0.04	0.16	0.31	n.a.	n.a.	n.a.	-	-	n.a.	
NZL	0.05	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.02	0.01	n.a.	n.a.	-	-	n.a.	-	

Source: Authors' simulations

Income gains from EPAs tariff reductions

Income gains from remaining tariff reductions according to existing EPAs would generally be limited except smaller East Asian countries.

Changes in equivalent variations according to EPAs tariff reductions

	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL	(% of GDP)
BRN	1.39	-	0.00	0.04	0.00	0.10	0.00	0.28	0.20	0.00	0.00	0.13	0.05	0.26	0.32	0.00	
KHM	6.81	0.00	-	0.01	0.00	0.21	0.00	0.21	1.86	1.45	0.00	2.81	0.06	0.00	0.19	0.00	
IDN	0.14	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.08	0.02	0.00	
LAO	1.05	0.00	0.00	0.00	-	0.00	0.00	0.00	0.17	0.03	0.01	0.82	0.01	0.02	0.01	0.00	
MYS	1.32	0.00	0.00	0.01	0.00	-	0.00	0.15	0.02	0.01	0.01	0.48	0.00	0.56	0.09	0.00	
PHL	0.23	0.00	0.00	0.00	0.00	0.00	-	0.01	0.00	0.00	0.03	0.00	0.02	0.07	0.09	0.00	
SGP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
THA	0.47	0.00	0.02	0.03	0.00	0.04	0.01	0.00	-	0.03	0.05	0.26	0.00	0.01	0.01	0.01	
VNM	0.38	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	-	0.00	0.23	0.03	0.04	0.06	0.00	
AUS	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	n.a.	-	n.a.	n.a.	n.a.	
CHN	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.a.	-	-	-	n.a.	n.a.	
IND	0.03	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	n.a.	n.a.	-	
JPN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.a.	-	n.a.	-	-	-	
KOR	0.07	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.01	n.a.	n.a.	n.a.	-	-	n.a.	
NZL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.a.	n.a.	-	-	n.a.	-	

Source: Authors' simulations

Tariff concessions: GTAP simulations

The ratios of income gains generated by EPAs compared with full tariff removals would be more or less proportional to tariff concessions in terms of trade weighted average tariff rates.

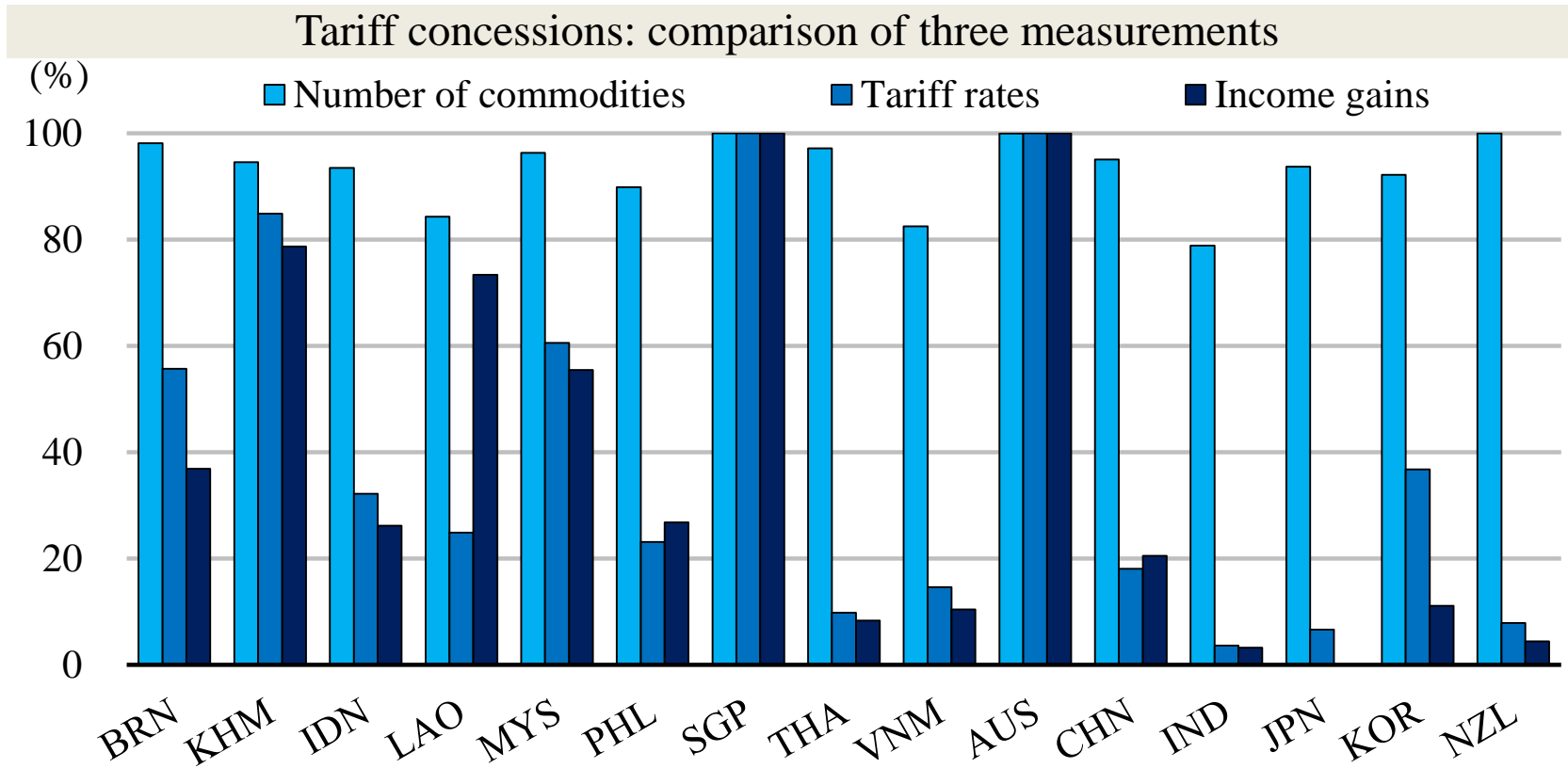
Tariff concessions in East Asian EPAs: income gains

	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL	(%)
BRN	36.9	-	62.6	69.5	0.0	50.3	51.9	14.6	89.3	5.0	12.4	24.7	39.5	80.3	89.0	22.7	
KHM	78.7	96.3	-	100.8	100.0	100.1	100.1	100.0	99.9	100.0	43.8	68.6	64.6	2.7	31.1	1.2	
IDN	26.2	-	96.9	-	-	70.2	0.0	1.5	0.4	0.0	85.2	17.9	4.4	44.4	52.3	n.s.	
LAO	73.4	-	2.4	n.s.	-	23.6	1.3	9.2	32.0	55.1	59.3	96.7	86.1	n.s.	n.s.	94.2	
MYS	55.5	99.1	5.1	n.s.	100.0	-	0.5	79.8	31.4	18.8	74.2	68.0	5.6	72.8	20.1	69.7	
PHL	26.8	-	-	2.5	-	0.0	-	15.3	0.0	0.0	97.2	0.0	23.3	36.0	44.9	n.s.	
SGP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
THA	8.3	14.0	82.8	8.5	17.5	9.1	3.0	0.8	-	11.3	77.6	13.9	0.0	1.1	2.8	79.5	
VNM	10.4	n.s.	n.s.	8.9	n.s.	32.8	32.1	16.4	n.s.	-	2.2	9.6	15.8	23.1	7.3	n.s.	
AUS	100.0	0.0	100.0	-	-	100.0	100.0	-	100.0	100.0	-	n.a.	-	n.a.	n.a.	n.a.	
CHN	20.5	0.0	0.2	n.s.	-3.0	5.9	n.s.	29.7	11.9	63.9	n.a.	-	-	-	n.a.	n.a.	
IND	3.2	0.0	0.0	3.6	0.0	1.5	34.1	6.0	5.2	2.5	-	-	-	n.a.	n.a.	-	
JPN	n.s.	0.0	68.6	n.s.	0.0	0.9	n.s.	n.s.	0.1	20.8	n.a.	-	n.a.	-	-	-	
KOR	11.1	91.7	n.s.	3.4	2.9	87.3	n.s.	97.4	2.8	3.9	n.a.	n.a.	n.a.	-	-	n.a.	
NZL	4.4	18.0	5.5	-	-	0.7	4.8	-	3.5	13.2	n.a.	n.a.	-	-	n.a.	-	

Source: Authors' simulations

Tariff concessions in East Asia

Tariff concessions in East Asian EPAs have not substantially been high enough in effect.



Sources: Authors' estimates and simulations

Impacts of RCEP

ASEAN countries would enjoy income gains from East Asian tariff reductions both by existing EPAs and additional EPAs. Other six countries would benefit much more from future RCEP.

Income gains from East Asian tariff reductions

	From 2011	Past EPAs	Additional	Past ratio
	(% of GDP, %)			
Brunei	5.3	2.2	3.1	41.5
Cambodia	11.0	8.1	3.0	73.6
Indonesia	2.2	0.4	1.8	16.8
Lao	4.2	1.3	2.9	31.1
Malaysia	3.8	1.6	2.2	41.4
Philippines	0.9	0.3	0.5	39.2
Singapore	2.9	0.8	2.0	29.6
Thailand	6.4	0.6	5.8	9.8
Viet Nam	6.1	1.3	4.8	21.1
Australia	1.6	0.1	1.5	5.2
China	0.6	0.0	0.6	3.6
India	1.6	0.0	1.6	-0.1
Japan	1.6	0.1	1.5	6.4
Korea	5.3	0.1	5.2	1.9
New Zealand	1.9	0.1	1.8	6.3

Source: Authors' simulations